

SOUTHERN UNIVERSITY AT SHREVEPORT
Division of Science and Technology
Department of Mathematics and Computer Science

Course Syllabus for Pre-Calculus Algebra 135

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Semester: Spring 2010
Class Location: 214 NCR.
SUSLA MLK campus

SUSLA MISSION STATEMENT

Southern University at Shreveport Louisiana, an autonomous unit of the Southern University System, seeks to provide a quality education for its students, while being committed to the total community. This institution awards certificates and associate degrees, prepares students for careers in technical and occupational fields, and offers courses and programs that are transferable to other colleges and universities. Dedicated to excellence in instruction and community services, this open enrollment institution promotes cultural diversity, provides developmental and continuing education, and seeks partnerships with business and industry.

I. CATALOG DESCRIPTION

This course is a study of relations, functions, graphs, inequalities, mathematical induction, binomial theorem, theorems about zeros of polynomial functions, rational functions, partial fractions, exponential and logarithmic functions. (3 credit hours)

II. PREREQUISITE

Math 133 or equivalent (Intermediate Algebra)

III. TEXTBOOK

Precalculus , 4th Edition by M. Lial, J. Hornsby, and D. Schneider,
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IV. COURSE OBJECTIVES

At the completion of this course, the student should be able to:

1. Solve and graph solution sets of different kinds of inequalities.
2. Graph algebraic and rational functions.
3. Perform operations on functions.
4. Divide using synthetic division.
5. Prove statements using mathematical induction.
6. Expand expressions using the binomial theorem.
7. Decompose partial fractions.
8. Express exponential and logarithmic functions in both forms and solve equations.

V. SUSLA STUDENT LEARNING OUTCOMES

The graduate from Southern University as Shreveport should be able to:

1. Demonstrate proficiency in written and oral communication.
2. Employ critical thinking and quantitative reasoning to solve problems.
3. Demonstrate technological competency.
4. Conduct research and demonstrate information literacy.
5. Demonstrate and display professional deportment.

VI. COURSE STUDENT LEARNING OUTCOMES

After the completion of this course, the student should be able to:

1. Solve problems by analyzing, interpreting, and applying properties and other information learned from previous activities. (SLOs 1,2)
2. Solve and graph the solution set of linear inequalities and use the number line approach to solve and graph quadratic and rational inequalities. (SLO 2)
3. Determine and employ the correct property for solving absolute value inequalities. (SLOs 1,2)
4. Graph algebraic and rational functions using specified information and submit in a timely manner. (SLOs 1,2,3,5)
5. Demonstrate division of polynomials with synthetic division and relate the process to long division. (SLO 2)
6. Evaluate and prove statements using mathematical induction. (SLO 2)
7. Expand certain expressions using the binomial theorem. (SLO 2)
8. Decompose a rational expression into partial fractions. (SLO 2)
9. Apply definitions to express exponential and logarithm functions in both forms and solve equations using calculators when necessary. (SLO 2,3)

VII. UNITS OF STUDY

- A. Equations and Inequalities
 - 1.7 Inequalities
 - 1.8 Absolute Value Equations and Inequalities
- B. Graphs and Functions
 - 2.1 Rectangular Coordinates and Graphs
 - 2.2 Circles
 - 2.3 Functions
 - 2.4 Linear Functions
 - 2.5 Equations of Lines, Curve Fitting
 - 2.6 Graphs of Basic Functions
 - 2.7 Graphing Techniques
 - 2.8 Functions Operations and Composition
- C. Polynomial and Rational Functions
 - 3.1 Quadratic Functions and Models
 - 3.2 Synthetic Division
 - 3.3 Zeros of Polynomial Functions
 - 3.4 Polynomial Functions
 - 3.5 Rational Functions
 - 3.6 Variation
- D. Further Topics in Algebra
 - 4.2 Exponential Functions
 - 4.3 Logarithmic Functions
 - 9.4 Partial Fractions
 - 11.4 The Binomial Theorem
 - 11.5 Mathematical Induction

VIII. EVALUATION

Final grades will be determined by the number of points a student earns from quizzes, homework, and examinations.

The percentage scale is as follows:

90-100%	= A
80- 89%	= B
70- 79%	= C
60- 69%	= D
0- 59%	= F

$$(\text{Number of points earned}) / (\text{Number of points possible}) = x\%$$

IX. REQUIREMENTS

- i. Each student must have a textbook.
- ii. Each student must keep a notebook.
- iii. Calculator (not required but may be used).
- iv. Assignments must be clearly and neatly written on one side of paper only.
- v. Attendance (see Catalog for Attendance Policy).
- vi. Assignments must be turned in on time. You will be given one opportunity to do a make-up on the assignment, otherwise, a quiz will be given for the missed assignment. Points will be deducted for certain late work.
- vii. Do not turn in assignments written on paper with jagged edges.
- viii. Graph paper and pencil

X. UNIVERSITY AND CLASSROOM POLICIES

Disabilities Policy: Southern University at Shreveport, Louisiana is in compliance with the regulations of the American with Disabilities ACT. The coordinator for ADA is assigned to the Office of Student Affairs. Anyone with special needs should contact the Vocational and Placement Center located in the Counseling Center in the Fine Arts building.

Academic Dishonesty Policy: Plagiarism, cheating, and any other form of academic dishonesty are prohibited. Any student who is caught cheating on a test, exam, quiz or assignment will be given a grade of zero (0) for the specific evaluation. Students assume full responsibility for the content and integrity of the academic work they submit. The guiding principle of academic integrity shall be that a student's submitted work, examinations, reports, and projects must be that of the student's own work.

Officially Enrolled: A student is required to show the instructor a paid receipt on the first day of class. A student is not officially enrolled in class unless he or she has a stamped paid class schedule. It is the student's responsibility to ensure that all steps of the registration process have been completed before attending class.